University of Gdańsk

Subject card

Subject name and code	Medical aspects of cell biology, PG_00197658		
Field of study	Biotechnology		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2027/2028
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	5	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Patrycja Koszałka	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	20.0	0.0	0.0	0.0	0.0	20

E-learning hours included: 0.0

Learning activity and number of study hours

Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
Number of study hours	20	5.0	25.0	50

Subject objectives

The aim of the course is to provide contemporary knowledge regarding selected aspects of cell biology related to human medicine, in particular related to the regulation of cell functions, its response to damage and disorders of its functions and the response to signals reaching it, together with the introduction of specific concepts and terminology related to the discussed aspects.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOTECHL3_W05] The graduate understands at an advanced level the mechanisms of vital function disorders and knows the causes, symptoms and methods of assessing selected disorders and pathological changes in the field of pathophysiology, biochemical disorders, and neoplasia; knows the methods of assessing these disorders in the field of medical biotechnology and molecular diagnostics.	The student knows selected aspects of cell biology related to human medicine, in particular the regulation of cell functions, its response to damage and disorders of its function, and its response to signals reaching it.	[SW4] test/exam - oral or written
[BIOTECHL3_W09] The graduate possesses structured and advanced knowledge of the terminology and concepts used in biological and medical sciences and related disciplines.	The student knows and understands specific concepts and terminology related to selected aspects of cell biology related to human medicine, in particular the regulation of cell functions, its response to damage and disorders of its function, and the response to signals reaching it.	[SW4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>1. Protein interactions in signaling and intracellular transport.

2. Regulation of the functions of transcription factors in signal transduction pathways - signaling of growth and trophic factors.

3. Signaling of cell-cell and cell-extracellular environment interactions.

4. Cell death signal transduction pathways. Cell response to damage. Mechanisms of cell death.

5. Disorders of signal transduction and gene expression in cancer cells and virus-infected cells.

6. Molecular basis of angiogenesis.

7. Basic mechanisms of non-specific and specific immunity.

8. Antigen recognition by specific response cells.

9. Response to infection - cellular mechanisms of specific immunity.

10. Mechanisms of cell signaling in specific and non-specific immunity.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Basic knowledge, competencies and skills specified for Modules 01-04 are required</td></tr>
<tr><td>Assessment methods and criteria</td><td><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>[BIOTECHL3_W05]</td><td>51.0%</td><td>50.0%</td></tr>
<tr><td>[BIOTECHL3_W09]</td><td>51.0%</td><td>50.0%</td></tr>
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<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>Variable literature sources provided in lecture materials</td></tr>
<tr><td>Supplementary literature</td><td>Students independently search and select course materials using library resources and electronic information sources</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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